UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,193	11/17/2003	Paul J. Van Dyk	TRCX-005/02US (300171-202	4129

			EXAMINER
22903	7590	10/21/2005	PRETLOW, DEMETRIUS R

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ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/716,193	DYK ET AL.
	Examiner	Art Unit	
	Demetrius R. Pretlow	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 November 2003*.

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-15 and 24-34* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *9-15* is/are allowed.

6) ☒ Claim(s) *1-6, 8, 24, 25 and 28-34* is/are rejected.

7) ☒ Claim(s) *7, 26 and 27* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *17 November 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/27/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed April 27, 2005 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because Quantitative Risk and Reliability Assessment is missing a publication date. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6,8, 24,27-34 are provisionally rejected under the judicially created

doctrine of obviousness-type double patenting as being unpatentable over claims 1-3,6-

8,28-36 of copending Application No. 10/684329. Although the conflicting claims are

not identical, they are not patentably distinct from each other because.

10/716193	10/684329
1. A method for managing a safety instrumented function including a plurality of instrumented function components, the method comprising: obtaining, from an asset management application, operating information about at least one of the plurality of instrumented function components; determining a probability of failure on demand for the safety instrumented function based at least in part on the operating information; comparing the probability of failure on demand with a designed probability of failure on demand for the safety instrumented function to establish a variance; and managing the plurality of instrumented function components based on the variance. 2. The method of claim 1 wherein the probability of failure on demand is an instantaneous probability of failure on demand. 3. The method of claim 1 wherein the probability of	1. A method for managing a safety instrumented function including a plurality of instrumented function components, the method comprising: obtaining operating information about at least one of the plurality of instrumented function components; determining a probability of failure on demand for the safety instrumented function based on the operating information; comparing the probability of failure on demand with a designed probability of failure on demand for the safety instrumented function to establish a variance; and managing the plurality of instrumented function components based on the variance. 2. The method of claim 1 wherein the probability of failure on demand is an instantaneous probability of failure on demand. 3. The method of claim 1 wherein the probability of failure on demand is an average probability of failure on

failure on demand is an average probability of failure on demand.

4. The method of claim 1 wherein the obtaining operating information includes obtaining an indication that the at least one of the plurality of instrumented function components has failed.

5. The method of claim 4 including: setting a probability of failure on demand for the at least one of the plurality of instrumented function components to a predefined value; wherein the determining includes calculating the probability of failure on demand for the safety instrumented function as a function of the probability of failure on demand for the at least one of the plurality of instrumented function components.

6. The method of claim 1 wherein the obtaining further includes: obtaining operating information about each of the plurality of instrumented function components; wherein the determining includes calculating probability of failure on demand for each of the plurality of instrumented function components as a function of corresponding operating information received for each of the plurality of instrumented function components, thereby generating a plurality of probability of

demand.

6. The method of claim 1 wherein the obtaining operating information includes obtaining an indication that the at least one of the plurality of instrumented function components has failed.

7. The method of claim 6 including: setting a probability of failure on demand for the at least one of the plurality of instrumented function components to a predefined value; wherein the determining includes calculating the probability of failure on demand for the safety instrumented function as a function of the probability of failure on demand for the at least one of the plurality of instrumented function components.

8. The method of claim 1 wherein the obtaining further includes: obtaining operating information about each of the plurality of instrumented function components; wherein the determining includes calculating probability of failure on demand for each of the plurality of instrumented function components as a function of corresponding operating information received for each of the plurality of instrumented function components, thereby generating a plurality of probability of

failure on demand values; and wherein the probability of failure on demand for the safety instrumented function is determined as a function of the plurality of probability of failure on demand values.

8. The method of claim 1 wherein the managing comprises reducing a test interval between tests of another of the plurality of instrumented function components in response to the variance exceeding a maximum variance.

24. A processor readable medium including processor-executable code to generate safety availability information for an instrumented function including a plurality of instrumented function components, the code comprising instructions for: obtaining, from an asset management application, operating information about at least one of the plurality of instrumented function components; determining a probability of failure on demand for the instrumented function based at least in part on the operating information; and generating the safety availability information based on the probability of failure on demand.

27. The computer-executable code of claim 24 wherein the determining includes: determining a probability of failure on demand for each of the a plurality of instrumented

failure on demand values; and wherein the probability of failure on demand for the safety instrumented function is determined as a function of the plurality of probability of failure on demand values.

12. The method of claim 1 wherein the managing comprises reducing a test interval between tests of another of the plurality of instrumented function components in response to the variance exceeding a maximum variance.

28. Computer-executable code to generate safety availability information for an instrumented function, the code comprising instructions for: obtaining operating information about at least one of a plurality of instrumented function components, wherein the instrumented function includes the plurality of instrumented function components; determining a probability of failure on demand for the instrumented function based on the operating information; and generating the safety availability information based on the probability of failure on demand.

29. The computer-executable code of claim 28 wherein the determining includes: determining a probability of failure on demand for each of the a plurality of instrumented function components thereby generating a plurality of

function components thereby generating a plurality of probability on demand values; and calculating the probability of failure on demand for the instrumented function based on the plurality of probability on demand values.

28. The computer-executable code of claim 24 wherein the probability of failure on demand is an instantaneous probability of failure on demand.

29. The computer-executable code of claim 24 wherein the probability of failure on demand is an average probability of failure on demand.

30. The computer-executable code of claim 24 wherein the obtaining operating information comprises obtaining a test completion time for the at least one of the plurality of instrumented function components.

31. The computer-executable code of claim 24 further including instructions for providing an alarm based on the safety availability information.

32. The computer-executable code of claim 24 further including instructions for providing a display of the safety availability information.

probability on demand values; and calculating the probability of failure on demand for the instrumented function based on the plurality of probability on demand values.

30. The computer-executable code of claim 28 wherein the probability of failure on demand is an instantaneous probability of failure on demand.

31. The computer-executable code of claim 28 wherein the probability of failure on demand is an average probability of failure on demand.

32. The computer-executable code of claim 28 wherein the obtaining operating information comprises obtaining a test completion time for the at least one of the plurality of instrumented function components.

33. The computer-executable code of claim 28 further including instructions for providing an alarm based on the safety availability information.

34. The computer-executable code of claim 28 further including instructions for providing a display of the safety availability information.

35. The computer-executable

33. The computer-executable code of claim 24 wherein the safety availability information is selected from the group consisting of: a probability of failure on demand, a safety integrity level and a risk reduction factor. 34. The computer-executable code of claim 24 wherein the obtaining includes obtaining, via a network, operating information about the at least one of the plurality of instrumented function components from a programmable device coupled to the at least one of the plurality of instrumented function components.	code of claim 28 wherein the safety availability information is selected from the group consisting of: a probability of failure on demand, a safety integrity level and a risk reduction factor. 36. The computer-executable code of claim 28 wherein the obtaining includes obtaining, via a network, operating information about the at least one of the plurality of instrumented function components from a programmable device coupled to the at least one of the plurality of instrumented function components.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Dyk et al Application 10/684329 does not teach an asset management application. Eryurek et al. (US 2004/0186927) teach an asset management application. Note paragraph 89, lines 12-17 , 21-28.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Dyk et al Application 10/684329 to include the teaching of Eryurek et al. because it would allow the lifespan of an entitiy to be determined. Note Eryurek et al. paragraph 89, lines 12-13.

Claims 7, 25 and 26 are objected to for depending on a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 24,25,28,31-34 are rejected under 35 U.S.C. 102(e) as being anticipated

by Eryurek et al. (US 2004/0186927). Given the broadest reasonable interpretation in

reference to claim 1. Eryurek et al. teach obtaining, from an asset management

application, operating information about at least one of the plurality of instrumented

function components; Note paragraph 89, lines 12-17,21-28. Eryurek et al. teach

determining a probability of failure on demand for the instrumented function based at

least in part on the operating information; Note paragraph 89, lines 17-23. Eryurek et al.

teach generating the safety availability information based on the probability of failure on

demand. Eryurek et al. teach generating the safety availability information (maintenance

priority index) based on the probability of failure on demand. Note paragraph 93, lines

20-22, 35-36, and 40 which teach the devices close to critical failure which suggests the

safety of the device.

In reference to claim 25, Eryurek et al. teach wherein the operating information

includes an indication that the at least one of a plurality of instrumented function

components has failed. Note paragraph 89, lines 10-12.

In reference to claim 28, Eryurek et al. teach wherein the probability of failure on

deman is an insatantaneous probability of failure. Note paragraph 93 lines 19-20.

In reference to claim 31, Eryurek et al. teach including instructions for providing

an alarm based on the safety availability information. Note paragraph 53, lines. Alarms

are provided to the asset reporter which suggests that the device is near failure (not

safe).

In reference to claim 32, Eryurek et al. teach including instructions for providing

a display of the safety availability information. Note paragraph 67, lines 7-13.

In reference to claim 33, Eryurek et al. teach the safety availability information

(maintenance priority index) is selected from a probability of failure on demand. Note

paragraph 93, lines 20-25.

In reference to claim 34, Eryurek et al. teach obtaining includes obtaining, via a

network, operating information about the at least one of the plurality of instrumented

function components from a programmable device coupled to the at least one of the

plurality of instrumented function components. Note paragraph 35, lines 1-11.

Claims 26, 27, 29, and 30 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

In reference to claim 26 the prior art of record does not teach the inclusion of the limitations of an wherein the operating information includes an indication that at least one of the plurality of instrumented function components has been replaced, and wherein the computer executable code includes instructions for resetting a time since a last test for the at least one of the plurality of instrumented function components in response to the indication. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claim 27 the prior art of record does not teach the inclusion of the limitations of an determining a probability of failure on demand for each of the a plurality of instrumented function components thereby generating a plurality of probability on demand values; and calculating the probability of failure on demand for the instrumented function based on the plurality of probability on demand values. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claim 29 the prior art of record does not teach the inclusion of the limitations of an wherein the probability of failure on demand is an average probability of failure on demand. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claim 30 the prior art of record does not teach the inclusion of the limitations of an wherein the obtaining operating information comprises obtaining a test

completion time for the at least one of the plurality of instrumented function

components. It is these limitations found in each of the claims, as they are **claimed in**

the combination, that has not been found, taught or suggested by the prior art of

record.

Allowable Subject Matter

Claims 9-15 are allowed.

The best prior art of record , particularly Eryurek et al. (US 2004/0186927) teach

a process control system uses an asset optimization reporter to collect status

information pertaining to the assets of a process plant from various data sources of the

plant. However Eryurek et al. does not teach the following claim limitations.

The primary reason for the allowance of claims 9-15 is the inclusion of the

limitations of an online safety integrity level application in communication with the asset

management application wherein the online safety integrity level application is

configured to receive the status information and calculate a probability of failure on

demand for the safety instrumented function based at least in part on the status

information. It is these limitations found in each of the claims, as they are **claimed in**

the combination, that has not been found, taught or suggested by the prior art of

record which makes these claims allowable over the prior art.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Demetrius R. Pretlow whose telephone number is (571)

272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow

Patent Examiner

BRYAN BUI
PRIMARY EXAMINER